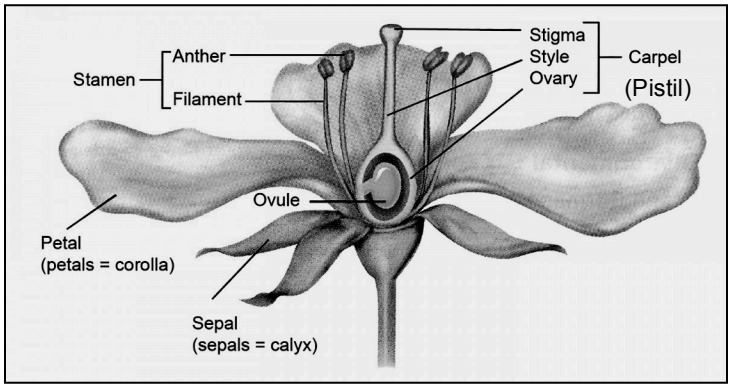
Name: _____ Date: _____ Pd: _____
Botany 322

Flower Dissection



Introduction

Flowers are more than ornamental parts of a plant. They are the reproductive structures of the angiosperm, the flowering plants. Flowers are efficient structures for sexual reproduction, which has greatly aided the angiosperms in becoming so widespread.

Objectives

In this lab you will be expected to:

1. Dissect a flower and sketch it, labeling all the parts.
2. Observe pollen grains and make a labeled drawing.
3. Observe a pistil, which has been dissected, and make a labeled drawing of the ovary.

Procedure

1. Dissect your flower carefully:
    - Observe the **sepals** and **petals**. Sepals are usually green, leaf like parts at the base of the flower. Sepals provide protection to the bud. Petals are usually the brightly colored parts of a flower. Petals protect the delicate structures inside the flower and may also attract insects. The sepal and petals are not directly involved in reproduction and many flowers lack them.

    - Carefully remove a sepal (if you have one, not all flowers do) and all the petals from the flower by holding the flower stem and gently pulling the sepal and petals away and off.

    - Take a look at the **stamen**. This is the stalk-like structure with caps found on the inside of the petals, or still attached to the stem. All parts that make up the stamen are associated with a flower's male reproductive system. The stalk portion of a stamen is the **filament**. It supports the **anther**. The anther produces pollen grains that contain plant sperm. Carefully remove a stamen.

    - Now focus on the **pistil**. The pistil is a slender stalk like structure with a round base connected to the stem. All parts that make up the pistil are associated with a flower's female reproductive system. A detailed study of the pistil reveals that it is composed of three parts. The **stigma** is the top portion of the pistil. It is usually sticky. The stigma is the collecting place for pollen grains. The stalk of the pistil is the **style**. The base of the pistil is the **ovary**, which may be partly hidden from view by the sepals. The ovary contains **ovules**. The ovules are the eggs of plants. Very, very carefully cut the pistil in half long ways with the razor blade.

2. Observe wet-mount slides of: pollen grains (high power) and a thin sliced section of the ovary (low power). Make a labeled drawing of each. Draw what you see in the microscope in the space provided on your lab paper. Be sure to include the magnification.

Flower #1 (preferably Lily)

1. Draw a stamen and label the anther and filament. After carefully counting and removing the sepals, petals, and stamens, determine the position of the ovary relative to the receptacle.

# Sepals	# Petals	# Stamens	Ovary Position (superior or inferior)

Pistil on its receptacle
(Label: pistil, ovary & receptacle)

Stamen
(Label: anther and filament)

Wet Mount of Pollen Grains

Magnification:

Wet Mount of Ovary

Magnification:

Flower #2 (preferably Daisy)

1. Slice the receptacle in half *vertically* and note the numerous small flowers clustered at the flower head. There are two types of flowers:
    a. the outer “ray” flowers have a single fused petal facing outward
    b. the petals of the inner “disc” flowers are barely visible as a small tube
2. Look carefully at the flowers: there are also separate **male** (stamen-bearing) and **female** (pistil-bearing) flowers.

Flower cross-section

(Label: receptacle, ray and disc flowers and regions that contain male and female flowers)

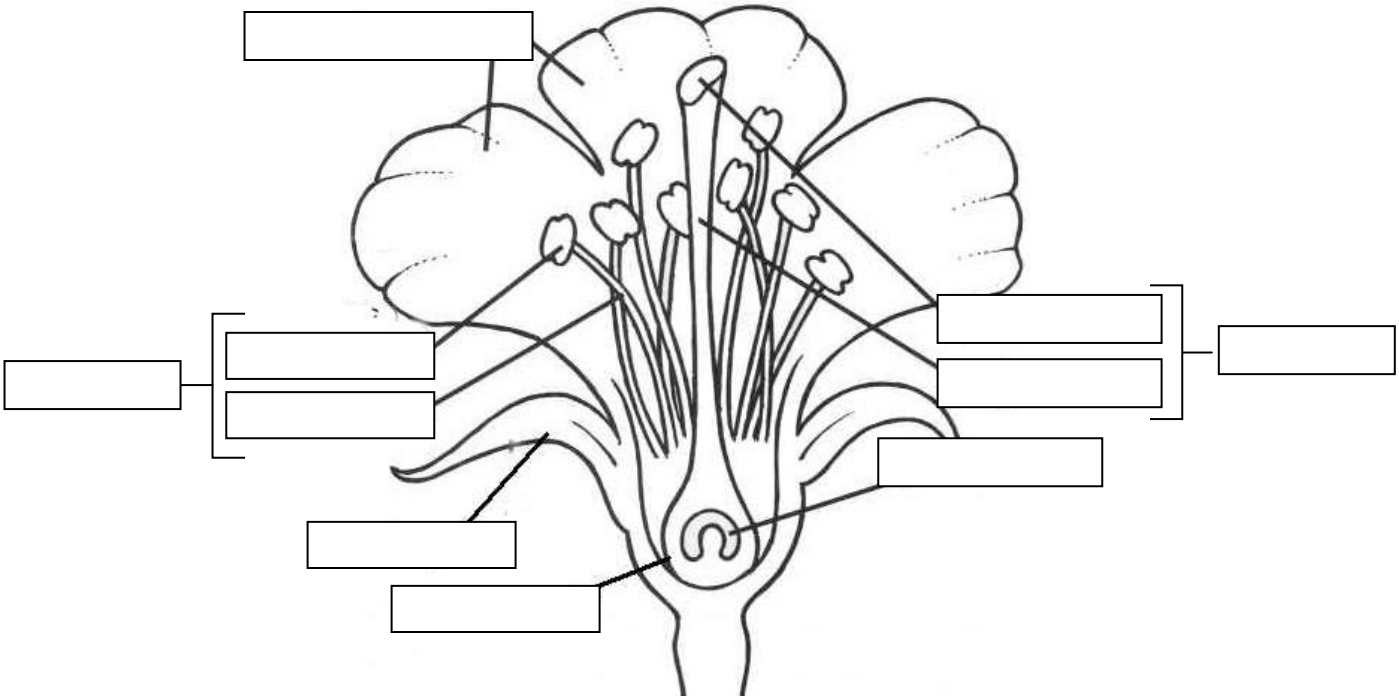
Flower Vocabulary (illustrations may be of Lily structures as they’re easier to draw)

Structure	Definition/Function	Illustration
Petals		
Sepals		
Stamen(s)		
Pistil(s)		
Ovary		
Anther		
Filament		

Flower Basics

Name _____

1. Label the parts of the flower shown in the diagram below.



2. Identify each part of the flower described below using the words in the word list.

Word List:
Anther
Fertilization
Filament
Fruit
Imperfect
Nectar
Ovary
Perfect
Petals
Pistil
Pollen
Seedling
Sepals
Stamen
Stigma
Style

_____ - The female part of a flower
_____ - A small plant that is just starting to grow
_____ - The place where pollen develops and is stored
_____ - The female sex cell in a plant
_____ - Occurs when the sperm and egg cells unite
_____ - A sugary substance that attracts insects
_____ - The male sex cell in a plant
_____ - The male part of a flower
_____ - The stalk that supports the anther
_____ - The part of the pistil that receives the pollen
_____ - Part that connects the stigma and ovary
_____ - Protective leaf-like enclosure for the flower bud
_____ - The ripened ovary of a plant that contains seeds
_____ - Flower that contains both male and female parts
_____ - Flower that lacks either male or female parts
_____ - The structures that make up the outside of the flower and may be colored or contain nectar or perfume glands

Image: http://www.smithlifescience.com/SciFlowerDiagramBlank.jpg

T. Trimpe 2010 Worksheet developed for use with the "Our Flowering World" video from United Streaming.